

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently amended) A method of forming a bump comprising :

(a) preparing a pad covered with an insulating layer;

(b) forming a resist layer on the insulating layer to have a through-hole located over the pad, the resist layer having an inner surface to define the through-hole, the inner surface having a portion projecting inwardly in the through-hole; and

(c) forming an opening in the insulating layer within exposed in the through-hole to expose at least a part of the pad after the step(b); and

(d) forming a metal post on the pad conforming to a shape of the through-hole while the resist layer exists so as to have a side surface having a recess formed therein ~~while the resist layer exists~~.

2. (Cancelled)

3. (Currently amended) A method of forming a bump comprising:

(a) preparing a pad covered with an insulating layer;

(b) forming a resist layer on the insulating layer to have a through-hole located over the pad, the through-hole having a ring shape so that part of the resist layer remains at a center of the through-hole; and

(c) forming an opening in the insulating layer ~~within~~ exposed in the through-hole to expose at least a part of the pad after the step (b); and

(d) forming a metal post on the pad conforming to a shape of the through-hole while the resist layer exists so that the metal post is not higher than the resist layer and the metal post has a hole exposing the pad ~~while the resist layer exists~~.

4. (Currently amended) A method of forming a bump comprising:

(a) preparing a pad covered with an insulating layer;

(b) forming a resist layer on the insulating layer to have through-holes located over the pad;

(c) forming an opening in the insulating layer ~~within~~ exposed in the through hole to expose at least a part of the pad after the step (b); and

(d) forming metal posts in the through-holes and on the pad conforming to a shape of the through-holes while the resist layer exists so as to have a space between the metal posts ~~while the resist layer exists~~.

5. (Previously presented) The method of forming a bump according to claim 1,

wherein the metal post comprises a first and a second metal post,

wherein the first metal post is formed while the resist layer exists , and the second metal post is formed on the first metal post.

6. (Previously presented) The method of forming a bump according to claim 1,
wherein the metal post comprises a first and a second metal post,
wherein the first metal post is formed while the resist layer exists, and
after removing the resist layer, the second metal post is formed so as to
cover a surface of the first metal post.

7. – 8. (Cancelled)

9. (Previously presented) The method of forming a bump according to claim 5,
wherein the first and second metal posts are formed by electroless plating.

10. (Previously presented) The method of forming a bump according to claim 6,
wherein the first and second metal posts are formed by electroless plating.

11. (Previously presented) The method of forming a bump according to claim 5,
wherein the first metal post is formed of a material containing nickel.

12. (Previously presented) The method of forming a bump according to claim 6,

wherein the first metal post is formed of a material containing nickel.

13. (Previously presented) The method of forming a bump according to claim
5,

wherein the second metal post is formed of a material containing gold.

14. (Previously presented) The method of forming a bump according to claim
6,

wherein the second metal post is formed of a material containing gold.

15. – 29. (Cancelled)

30. (Previously presented) The method of forming a bump according to claim
3,

wherein the metal post comprises a first and a second metal post,

wherein the first metal post is formed while the resist layer exists, and the
second metal post is formed on the first metal post.

31. (Previously presented) The method of forming a bump according to claim
3,

wherein the metal post comprises a first and a second metal post,

wherein the first metal post is formed while the resist layer exists, and

after removing the resist layer, the second metal post is formed so as to cover a surface of the first metal post.

32. – 33. (Cancelled)

34. (Previously presented) The method of forming a bump according to claim 30,
wherein the first and second metal posts are formed by electroless plating.

35. (Previously presented) The method of forming a bump according to claim 31,
wherein the first and second metal posts are formed by electroless plating.

36. (Previously presented) The method of forming a bump according to claim 30,
wherein the first metal post is formed of a material containing nickel.

37. (Previously presented) The method of forming a bump according to claim 31,
wherein the first metal post is formed of a material containing nickel.

38. (Previously presented) The method of forming a bump according to claim 30,

wherein the second metal post is formed of a material containing gold.

39. (Previously presented) The method of forming a bump according to claim 31,

wherein the second metal post is formed of a material containing gold.

40. (Previously presented) The method of forming a bump according to claim 4,

wherein each of the metal posts comprises a first and a second metal post,

wherein the first metal post is formed while the resist layer exists, and the second metal post is formed on the first metal post.

41. (Previously presented) The method of forming a bump according to claim 4,

wherein each of the metal posts comprises a first and a second metal post,

wherein the first metal post is formed while the resist layer exists, and after removing the resist layer, the second metal post is formed so as to cover a surface of the first metal post.

42. – 43. (Cancelled)

44. (Previously presented) The method of forming a bump according to claim
40,
wherein the first and second metal posts are formed by electroless plating.
45. (Previously presented) The method of forming a bump according to claim
41,
wherein the first and second metal posts are formed by electroless plating.
46. (Previously presented) The method of forming a bump according to claim
40,
wherein the first metal post is formed of a material containing nickel.
47. (Previously presented) The method of forming a bump according to claim
41,
wherein the first metal post is formed of a material containing nickel.
48. (Previously presented) The method of forming a bump according to claim
40,
wherein the second metal post is formed of a material containing gold.
49. (Previously presented) The method of forming a bump according to claim
41,
wherein the second metal post is formed of a material containing gold.